



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,621	03/29/2004	Chien-Hsueh Shih	67,200-1168	2719

7590 04/10/2007  
TUNG & ASSOCIATES  
Suite 120  
838 W. Long Lake Road  
Bloomfield Hills, MI 48302

EXAMINER
----------

WONG, EDNA

ART UNIT	PAPER NUMBER
----------	--------------

1753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/811,621

Applicant(s)

SHIH ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 2, 2007 has been entered.

This is in response to the Amendment dated February 7, 2007. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

***Response to Arguments***

**Claim Objections**

Claim 9 has been objected to because of minor informalities.

The objection of claim 9 has been withdrawn in view of Applicants' amendment.

**Claim Rejections - 35 USC § 112**

Claims 1-16 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The rejection of claims 1-16 under 35 U.S.C. 112, second paragraph, has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 102

I. Claims **1 and 2** have been rejected under 35 U.S.C. 102(a) as being anticipated by **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1).

The rejection of claims 1 and 2 under 35 U.S.C. 102(a) as being anticipated by Miura et al. has been withdrawn in view of Applicants' amendment.

II. Claims **9 and 10** have been rejected under 35 U.S.C. 102(a) as being anticipated by **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1).

The rejection of claims 9 and 10 under 35 U.S.C. 102(a) as being anticipated by Miura et al. has been withdrawn in view of Applicants' amendment.

III. Claims **17 and 20** have been rejected under 35 U.S.C. 102(a) as being anticipated by **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1).

The rejection of claims 17 and 20 under 35 U.S.C. 102(a) as being anticipated by Miura et al. has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 103

I. Claims **3-8** have been rejected under 35 U.S.C. 103(a) as being unpatentable

over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1) as applied to claims 1 and 2 above, and further in view of **Willis** (US Patent No. 4,347,108).

The rejection of claims 3-8 under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** as applied to claims 1 and 2 above, and further in view of **Willis** has been withdrawn in view of Applicants' amendment.

II. Claims **11-16** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1) as applied to claims 9 and 10 above, and further in view of **Willis** (US Patent No. 4,347,108).

The rejection of claims 11-16 under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** as applied to claims 9 and 10 above, and further in view of **Willis** has been withdrawn in view of Applicants' amendment.

III. Claims **18 and 19** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1) as applied to claims 17 and 20 above, and further in view of **Willis** (US Patent No. 4,347,108).

The rejection of claims 18 and 19 under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** as applied to claims 17 and 20 above, and further in view of **Willis** has been withdrawn in view of Applicants' amendment.

***Response to Amendment***

***Claim Rejections - 35 USC § 112***

I. Claims **9-16** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 9

line 7, recites "a second composition".

Applicants' specification, pages 1-17, does not mention a second composition in the electrolyte bath. Thus, there is insufficient written description to inform a skilled artisan that applicant was in possession of the claimed invention as a whole at the time the application was filed.

The Examiner has carefully considered the entire specification as originally filed, however, there is found no literal support in the specification for the newly added limitations in amended claims 9. Applicants have not provided the page number and line numbers from the specification as to where the newly added limitations are coming from. *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983) *aff'd mem.* 738 F.2d 453 (Fed. Cir. 1984).

II. Claims **9-16** are rejected under 35 U.S.C. 112, second paragraph, as being

Art Unit: 1753

indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9

line 7, "a second composition" lacks antecedent basis. What was the first composition?

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Bath***

I. Claims **1 and 2** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1).

Miura teaches an electrolyte bath, comprising:

(a) an electrolyte solution suitable for metal electroplating (= an electrolytic copper plating solution) [page 2, [0019]]; and

(b) a composition comprising an organic acid (= a complexing agent = an oxycarboxylic acid = citric acid) [page 2, [0023] and [0027]] and a non-ionic polymer (= a nonionic surfactant) [page 3, [0043]] mixed with said organic acid;

wherein said composition is disposed within said electrolyte solution (= the solution contains a complexing agent for the copper ions (page 2, [0019]); and a wetting agent may be added to the electroplating solution (col. 3, [0043])).

The organic acid is citric acid or acetic acid (page 2, [0027])

The bath of Miura differs from the instant invention because Miura does not disclose wherein said composition is disposed as a suspension layer within said electrolyte solution, said suspension layer of sufficient dimension to form a wetting layer on a substrate as said substrate is passed through said suspension layer, as recited in claim 1.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because Miura discloses a bath composition in a similar manner as instantly claimed. If the composition is physically the same, it must have the same properties (MPEP § 2112.01(11)).

Furthermore, the claims attempt to define the subject matter in terms of the result



to be achieved ("is disposed"), without providing the technical bath features necessary for achieving this result.

II. Claims **9 and 10** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1).

Miura teaches an electrolyte bath, comprising:

(a) an electrolyte solution suitable for copper electroplating (= an electrolytic copper plating solution) [page 2, [0019]]; and

(b) a second composition comprising an organic acid (= a complexing agent = an oxycarboxylic acid = citric acid) [page 2, [0023] and [0027]] and a non-ionic polymer (= a nonionic surfactant) [page 3, [0043]] mixed with said organic acid;

wherein said composition is disposed within said electrolyte solution (= the solution contains a complexing agent for the copper ions (page 2, [0019]); and a wetting agent may be added to the electroplating solution (col. 3, [0043])).

The organic acid is citric acid or acetic acid (page 2, [0027])

The bath of Miura differs from the instant invention because Miura does not disclose wherein said composition is disposed as a suspension layer within said electrolyte solution, said suspension layer of sufficient dimension to form a wetting layer on a substrate as said substrate is passed through said suspension layer, as recited in

claim 9.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because Miura discloses a bath composition in a similar manner as instantly claimed. If the composition is physically the same, it must have the same properties (MPEP § 2112.01(11)).

Furthermore, the claims attempt to define the subject matter in terms of the result to be achieved ("is disposed"), without providing the technical bath features necessary for achieving this result.

#### *Method*

**III.** Claims **17 and 20** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1).

Miura teaches a method for electroplating a metal onto a surface in an electroplating electrolyte solution, comprising the steps of:

(a) providing a composition mixture comprising an organic acid (= a complexing agent = an oxycarboxylic acid = citric acid) [page 2, [0023] and [0027]] and a non-ionic polymer (= a nonionic surfactant) [page 3, [0043]];

(b) forming a wetting layer on said surface (= a wetting agent may be added to the electroplating solution in order to improve wetting characteristics of the articles to be plated) [page 3, [0043]]; and

(c) electroplating said metal onto said surface following forming said wetting layer (= small pieces of a silicon wafer with a deposited seed layer were immersed in the plating solutions) [page 4, [0053]; and page 5, [0074]].

The organic acid is citric acid or acetic acid (page 2, [0027])

The method further comprises a substrate and wherein said surface comprises a metal seed layer deposited on said substrate (= a silicon wafer with a deposited seed layer) [page 4, [0050]].

The method of Miura differs from the instant invention because Miura does not disclose the following:

- a. Forming a suspension layer of said composition mixture within in the electrolyte solution, as recited in claim 17.
- b. Wherein the wetting layer is formed on said surface by passing said surface through said suspension layer and into said solution, as recited in claim 17.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because Miura discloses a method in a similar manner as instantly claimed. Similar processes can reasonably be expected to yield products which inherently have the same properties. *In re Spada* 15 USPQ 2d 1655 (CAFC 1990); *In re DeBlauwe* 222 USPQ 191; *In re Wiegand* 86 USPQ 155 (CCPA 195).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Bath***

I. Claims **3-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1) as applied to claims 1 and 2 above, and further in view of **Willis** (US Patent No. 4,347,108).

Miura is as applied above and incorporated herein.

The method of Miura differs from the instant invention because Miura does not disclose the following:

a. Wherein said non-ionic polymer is an alcohol, an amine or alkylphenol alkoxylate, as recited in claims 3 and 8.

Miura teaches that a wetting agent may be added to the electroplating solution in order to improve wetting characteristics of the article to be plated. Examples of such material include nonionic surfactants (page 3, [0043]).

Like Miura, Willis teaches a copper electroplating bath. Miura teaches that the incorporation of one or more wetting or surface active agents into the additive compositions and acid copper plating baths also results in a copper plating with improved leveling and brightness, and the additive compositions and plating baths

exhibit improved stability (col. 5, lines 39-44). The wetting agents are nonionic compounds of polyoxyalkylated naphthols, amines, alkanol amines, amides and polyglycols (col. 5, line 39 to col. 8, line 46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the nonionic surfactants described by Miura with wherein said non-ionic polymer is an alcohol, an amine or alkylphenol alkoxylate because a non-ionic polymer of an alcohol, an amine or an alkylphenol alkoxylate are known nonionic surfactants in the copper electroplating art (col. 5, line 39 to col. 8, line 46). Incorporating them in a copper electroplating bath would have also resulted in a copper plating with improved leveling and brightness, and the electroplating bath would have exhibited improved stability as taught by Willis (col. 5, lines 39-44).

b. Wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight, as recited in claim 4.

c. Wherein said organic acid is present in said composition in a wt. % of about 10, and said ionic polymer is present in said composition in a wt. % of about 5, as recited in claim 7.

Miura teaches that the complexing agent is used in the concentration range of, for example, 0.05 to 2.0 mol/L (page 3, [0039]). A wetting agent maybe added to the electroplating solution in order to improve wetting characteristics of articles to be plated (page 3, [0043]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition described by Miura with wherein said composition is present in said electrolyte solution in a concentration of about 5% by weight; and wherein said organic acid is present in said composition in a wt. % of about 10, and said ionic polymer is present in said composition in a wt. % of about 5 because the concentration of the composition, the organic acid and the ionic polymer are result-effective variables and one skilled in the art has the skill to calculate the concentrations that would have determined the success of the desired reaction to occur, e.g. if the concentration of the complexing agent is lower than either 0.05 mol/L or the molar concentration of copper ion in the plating solution, the complexing agent cannot keep copper ions in the plating solution in a stable manner, leading to formation of copper precipitation (MPEP § 2141.03 and § 2144.05(II)(B)).

The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991); and MPEP § 2144.

d.      Wherein said non-ionic polymer has a molecular weight of less than 1,000, as recited in claim 5.

Willis teaches Carbowax No. 1000 which has a molecular weight ranging from about 950 to 1,050 (col. 6, lines 32-34).

II. Claims **11-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1) as applied to claims 9 and 10 above, and further in view of **Willis** (US Patent No. 4,347,108).

Miura and Willis are as applied for the reasons discussed above and incorporated herein.

*Method*

III. Claims **18 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miura et al.** (US Patent Application Publication No. 2003/0155247 A1) as applied to claims 17 and 20 above, and further in view of **Willis** (US Patent No. 4,347,108).

Miura and Willis are as applied for the reasons discussed above and incorporated herein.

**RE: REMARKS**

Applicants state that Examiner is mistaken that Miura et al. teaches a non-ionic polymer or a non-ionic polymer mixed with an organic acid or a suspension layer within an electrolyte solution.

In response, Willis teaches non-ionic polymers as wetting agents. Miura teaches

a wetting agent and an organic acid in a composition. A suspension layer is within the electrolyte solution when such elements are combined in the complete bath composition.

Applicants state that Miura et al. do not disclose any non-ionic polymers in the examples (pages 4-5) showing the composition of the plating solution.

In response, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (MPEP § 2123 (II)).

Applicants state that Examiner erroneously argues that since Miura et al. disclose the same composition, that it is either irrelevant or inherent that the composition would form a suspension layer in the electrolyte plating solution.

In response, the electrolyte bath as presently claimed in claims 1, 9 and 17 comprises (i) an electrolyte solution, (ii) an organic acid and (iii) a non-ionic polymer.

One having ordinary skill in the art is able to make or synthesize the electrolyte bath as taught by Miura and Willis.

There is a question of how are the organic acid and the non-ionic polymer disposed as a suspension layer within the electrolyte solution. How is the suspension layer of the composition formed within the electrolyte solution if all of the same elements are in the bath? Why is this not happening in the prior art?



Applicants state that they again reject Examiners argument that since Miura et al. teach that both an organic acid and a non-ionic surfactant may be used as complexing agents and added to the electroplating solution to control the pH of the electroplating solution, that it is inherent that a suspension layer is disposed within the electrolyte as Applicants have disclosed and claimed. Examiner has provided no support for this assertion, and Miura et al. nowhere disclose or teach a suspension layer within the electrolyte or that it is sufficiently dimensioned to form a wetting layer on a substrate as Applicants have claimed.

In response, the electrolyte bath as presently claimed in claims 1, 9 and 17 comprises (i) an electrolyte solution, (ii) an organic acid and (iii) a non-ionic polymer.

One having ordinary skill in the art is able to make or synthesize the electrolyte bath as taught by Miura and Willis.

There is a question of how are the organic acid and the non-ionic polymer disposed as a suspension layer within the electrolyte solution. How is the suspension layer of the composition formed within the electrolyte solution if all of the same elements are in the bath? Why is this not happening in the prior art?

Applicants state that the Examiner merely states the bath of Miura has the same properties as Applicants "because similar compositions can reasonably be expected to yield products which inherently have the same properties". Examiner cites no support for this assertion, and nevertheless, it is clear that disposing a suspension composition

within an electrolyte bath is not a material or chemical property of a composition, but depends on several factors including a complex interrelationship between the compositions of the electrolyte, the composition of the suspension and whether or not the bath is agitated.

In response, the electrolyte bath as presently claimed in claims 1, 9 and 17 comprises (i) an electrolyte solution, (ii) an organic acid and (iii) a non-ionic polymer. There is no specific composition of the electrolyte, specific composition of the suspension and whether or not the bath is agitated claimed. Thus, what is the complex interrelationship between them?

Applicants state that Examiner has not established that the wetting agents of Miura et al. (which may be any wetting agent) necessarily could be disposed as a suspension in an electrolyte bath, indeed, Miura et al. does not disclose an electrolyte bath.

Applicants state that Examiner has provided no legitimate technical reasoning that 'any wetting agent' including a 'non-ionic surfactant' added to the electrolyte solution of Miura et al. would necessarily result in Applicants' invention.

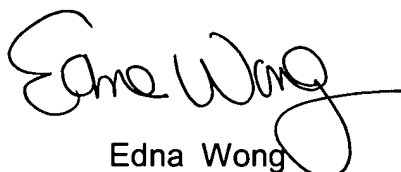
Applicants state that they further note that disposition of a suspension layer as Applicants have disclosed and claimed would make the complexing agents of Miura et al. unsuitable for the intended purpose of controlling the pH of the electroplating solution.

In response, claims 1, 9 and 17 as presently written do not require any specific organic acid and non-ionic polymer. Thus, it is hard to tell what would have been suitable or not.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Edna Wong". The signature is fluid and cursive, with a long horizontal stroke extending from the end of the name.

Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
April 5, 2007